

**Perceptual Modeling of Media Signals Based on  
Local Contrast and Directional Edges**

*Abstract of the Disclosure*

A perceptual model performs an analysis of a media signal, such as an image or  
5 audio signal. The model may be used in media signal processing applications such as  
digital watermarking and data compression to reduce perceptibility of changes made to  
code the signal. In one implementation, a method of reducing human perceptibility of  
visible artifacts attributable to embedding a digital watermark in a media signal is  
provided. The method determines a contrast measurement for local areas of the media  
10 signal; adjusts a contrast measurement for a local area if the contrast measurement is  
above a predetermined level; and embeds the digital watermark in the local areas in a  
manner determined at least in part by their respective contrast measurement.